

REMARKS

The Present Invention and Pending Claims

Claims 1, 2, 4-13, and 15-28 are pending and directed to a production method of 2-cyclohexyl-2-hydroxy-2-phenylacetic acid, an intermediate therefor, and a production method of the intermediate.

Amendments to the Claims

The claims have been amended to point out more particularly and claim more distinctly the present invention. Specifically, claims 1, 2, 4, 5, 10, 11, 13, 16, and 20-25 have been amended as to format to more clearly indicate the groups modified by the "optionally substituted" phrases. Claim 21 also has been amended to include the term "R" since it appears in the compound of formula [I]. Claims 3 and 14 have been canceled. Accordingly, no new matter has been added by way of these amendments.

Summary of the Office Action

Claims 1, 2, and 4-28 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly nonenabled. Claims 1, 2, 4-7, 10-17, and 20-28 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Claims 3 and 14 are rejected under 35 U.S.C. § 102(a) as allegedly anticipated by WO 00/27786 (Senanayake et al.). Reconsideration of these rejections is hereby requested.

Discussion of the Rejections under Section 112, First Paragraph

The Examiner contends that the specification provides support for the methyl ester derivative but does not teach how to make or use any other ester derivatives that are commensurate in scope for claims 1 and 2. According to the Examiner, the specification does not enable one of ordinary skill in the art to prepare ester derivatives other than the methyl compound (e.g., Example 1). In addition, the Examiner alleges that claims 4-28 are not enabled for compounds other than methyl ester derivatives (claims 4-28), a Lewis acid other than TiCl_4 (claims 4-9 and 20-28), hydrolysis reagent other than NaOH (claims 12, 13, 15-19, and 22-28), or a reduction reagent other than Pd/C (claims 10, 11, 14-21, and 24-28). Applicants traverse the rejection based on the following reasons.

Applicants need not exemplify each and every embodiment of the claimed invention. Applicants need only teach those of ordinary skill in the art how to make and use the present invention. The specification provides adequate support for how to make and use the

compounds of claims 1, 2, and 4-28. For example, page 16, line 10, through page 26, line 10, of the specification teaches how to prepare compounds of formulae [I]-[V]. Examples of suitable Lewis acids are provided at, for example, page 17, lines 8-22. Suitable reduction reagents and hydrolysis reagents are provided at, for example, page 20, lines 4-11, and page 22, lines 3-26, respectively.

Moreover, in addition to the numerous examples of suitable compounds and reagents provided in the specification, the Examples of the present application illustrate the synthesis of various compounds beyond those mentioned by the Examiner. For instance, Examples 18 and 19 describe the synthesis of a non-methyl ester derivative (i.e., 2-cyclohexyl-2-hydroxy-2-phenylacetic acid). Examples 13-16 describe the synthesis of compounds of the present invention using Lewis acids other than titanium tetrachloride, such as aluminum chloride, ferric chloride, and zirconium tetrachloride (see, for example, Table 1, page 34).

Therefore, based on the teachings of the specification and well-known chemistry in the art, no undue experimentation would be required for one of ordinary skill in the art to practice the method of the present invention. Accordingly, claims 1, 2, and 4-28 are enabled by the specification, and this rejection should be withdrawn.

Discussion of the Rejections under Section 112, Second Paragraph

Claims 1, 2, 4-7, 10-17, and 20-28 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite.

In particular, in claims 1, 2, 4, 5, 10, 11, 13, 16, and 20-25, the Examiner objects to the second instance of the term "which is optionally substituted...." The Examiner states that it is unclear which group(s) is modified by this term. The claims have been amended as to format to more clearly indicate the groups modified by the "optionally substituted" phrases. Specifically, the second instance of this term relates to the cyclohexyl, cyclopentyl, and norbornyl groups of item (b).

Regarding claims 4-6, 11, and 20-25, the Examiner alleges that it is unclear whether R and R' are different or the same. R and R' can be the same or different. The present application provides teachings as how to prepare compounds with different R and R' groups (see, for example, page 16, line 10, through page 26, line 10). In addition, commonly known chemistry can be used to convert an R substituent into a different R' substituent, if necessary. For example, a compound of formula [I] can undergo a transesterification reaction with, for

example, an alcohol of formula R'OH, to convert the compound to a different R' group before reacting with cyclohexene in the presence of a Lewis acid.

With respect to claims 4, 7, 20, 22, and 24, the Examiner alleges that the term "Lewis acid" is indefinite because some Lewis acids may not be successfully used in the claimed process. The Examiner has not provided a reasonable basis to support a conclusion that some Lewis acids may not be used successfully and that one of ordinary skill in the art would not know how to avoid such Lewis acids. As stated above, examples of suitable Lewis acids are provided at, for example, page 17, lines 8-22, of the specification. Examples 13-16 describe the synthesis of compounds of the present invention using several different Lewis acids. Applicants should not have to limit the exact nature of the Lewis acid in the claims. Based on the teachings of the specification and commonly known chemistry, one of ordinary skill in the art would know what Lewis acids are suitable for the method of claims 4, 7, 20, 22, and 24.

Similarly, the Examiner contends that claims 10, 12, 14, 15, 17-19, 24, and 26-28 are indefinite for failing to specify the hydrolysis reagent and/or reduction reagent. The specification provides ample support to guide one of ordinary skill in the art to select suitable reagents and reaction parameters, including solvents and temperatures. For example, page 19, line 12, through page 26, line 20, describes the hydrolysis and reduction reactions of compounds of formula [II]-[V], including typical reaction parameters. Accordingly, Applicants believe that it is not necessary to have to specify how such compounds are hydrolyzed and/or reduced as one of ordinary skill in the art would know how to hydrolyze and/or reduce such compounds based on common knowledge and the teachings of the specification.

For the above reasons, the Section 112, second paragraph, rejections are believed to be moot, and should be withdrawn.

Discussion of the Rejections under Section 102(a)

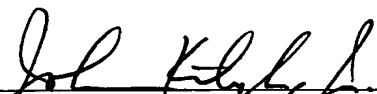
Claims 3 and 14 are rejected under 35 U.S.C. § 102(a) as allegedly anticipated by WO 00/27786 (Senanayake et al.). According to the Examiner, Senanayake et al. discloses the compound of formula [V] (see page 7 of Senanayake et al.). Senanayake et al. reportedly further discloses reducing the compound of formula [V] with Pd/C to prepare the compound of formula [III] (page 11 and page 16, line 24, through page 17, line 6, of Senanayake et al.). Claims 3 and 14 have been canceled. Accordingly, the anticipation rejection should be withdrawn.

In re Appln. of Ikemoto et al.
Application No. 09/992,167

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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